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Citrus Insect Control
For April 1957

Progress Report On Greasy
Spot And Its Control

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Selected Fruits and Juices
In November 1956

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From Florida Nurseries

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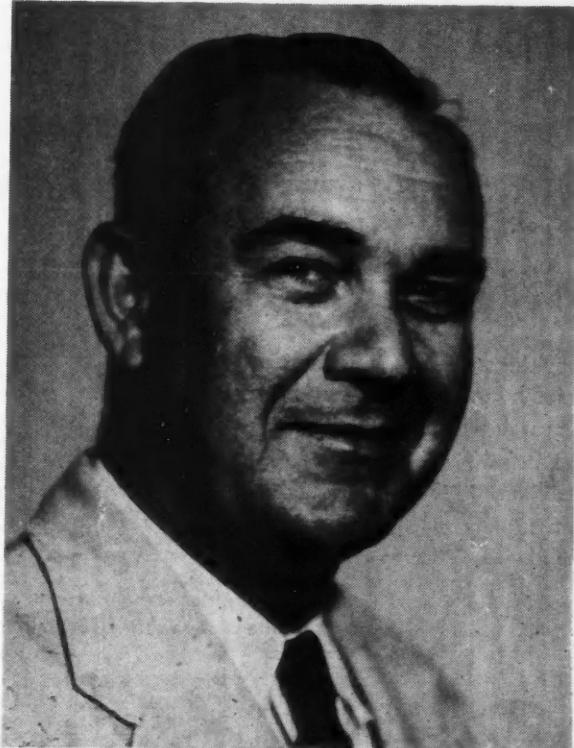
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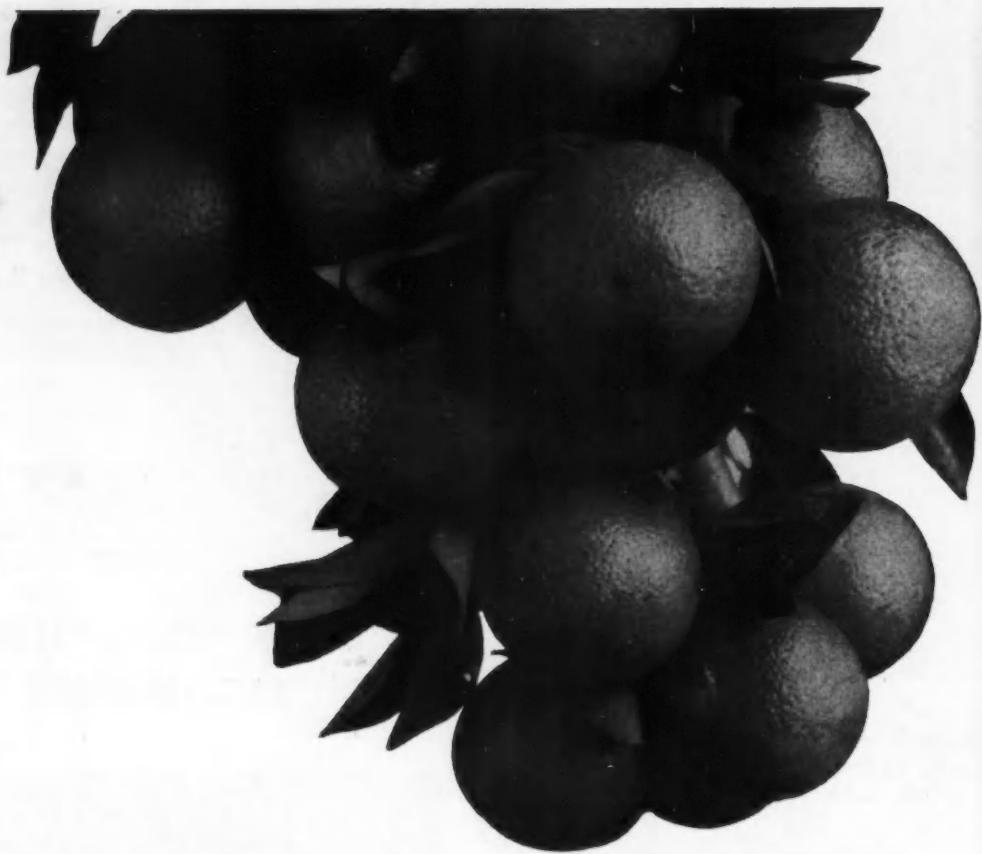
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R. M. Pratt

Citrus Insect Control



R. B. Johnson

For April
1957

W. L. THOMPSON
R. M. PRATT
R. B. JOHNSON*
Florida Citrus Experiment
Station, Lake Alfred



W. L. Thompson

Red scale activity increased sharply through March and infestations will be at a high level through April and May. Purple scale activity also has been increasing and is at a high level, but infestations through May will be below average.

Purple mite infestations are generally low, although some groves are heavily infested, especially in the Bartow and Ridge Districts. There will be an increasing trend through April and May, with the peak being reached in June. In any case, infestations will be lower than in the last two years, and if rains continue, they will be much lower.

Rust mite infestations have been declining but are still well above average. The declining trend usually continues through April and May but this may not be the case if there is considerable moisture.

Aphids are unusually abundant. Infestations will reach a peak about mid-April. Mealybug infestations will be about average this year.

Six-spotted mite infestations have been very low. An increasing trend will start about mid-April but few groves will be heavily infested.

SPRAY PROGRAM

Post-bloom spraying is well underway, but there will be a large number of groves to be sprayed during the last three weeks of April. At the time this article is written, March 22, there has been enough rain to cause the melanose fungus to become active resulting in severe leaf infection and some fruit infection. Even though some infection of fruit has developed, a copper spray should be applied as soon as possible because fruit will be susceptible for the next two months or more. It is particularly important that grapefruit be treated because it is mostly grown

for the fresh fruit market. The spray should also be applied to oranges as soon as possible because copper sprayed on fruit infected with melanose will cause star melanose, which is more of a grade-lowering factor than melanose alone. A post-bloom copper application will also limit greasy spot infection on the spring

lions are preferred at this time because these materials do not cause a shock to the trees and most spray materials can be mixed with them.

Oil emulsion at 1.3 percent is effective for scale and purple mite control. If oil is used on Temples, tangerines or oranges, it should be applied before the average fruit size

SCALE AND MITE ACTIVITY BY DISTRICTS*

District	Purple Scale	Red Scale	Purple Mite	Rust on leaves	Mite on fruit
West Coast	4.13	3.91	1.34	1.45	1.22
Indian River	4.70	3.81	.70	.30	—.25
Upper East Coast	3.64	3.86	.85	.72	0
Gainesville	3.83	1.34	—.17	.40	—
Orlando	3.59	.48	.77	.77	—.33
Brooksville	4.30	.27	1.31	1.62	1.00
Ridge	5.35	4.75	2.27	2.00	1.75
Bartow	5.31	5.00	1.89	2.55	2.75
State Average	4.45	4.00	1.28	1.26	.97
Last Year	4.15	3.22	2.21	1.12	1.19

* Thru week in March. Activity is computed from populations, amount of hatching of scales, and number of groves with increasing or decreasing infestations. Activity is considered high if above 4.0 for purple scale, 3.0 for red scale, and 1.5 for mites.

flush of foliage but should not be depended upon to control it through the summer.

Purple scale and red scale are problems in some groves and in such cases a scalicide should be applied to prevent the development of a heavy infestation before summer. On the East Coast, south of Sebastian, post-bloom scalicides have been especially effective and, during some years, it has not been necessary to make a second application.

Some thought should be given to the type of scalicides used in the spring. Oil sprays are most commonly used, but they have their limitations. Oil may cause leaf and fruit drop. It is most likely to cause damage when the relative humidity is low and the soil is dry. Neither parathion nor malathion are as likely to cause leaf and fruit drop as oil. However, the mixture of parathion and oil has caused more leaf drop than 1.3 percent oil alone.

Scale Control: Parathion 15 percent at 1.7 pounds or malathion, 5 pounds per 100 gallons before the fruit has grown up against the calyx where

is over $\frac{1}{2}$ inch in diameter because later applications may cause oil blotch. Oil and a neutral copper can be mixed for scale and melanose control and an arsenic compound can be added to that mixture for grapefruit.

When mixing either copper and arsenic compounds, close observation should be made of the spray mixture in the tank to see whether it has flocculated. If the materials have flocculated, the manufacturer of the oil emulsion should be contacted so the right deflocculator can be recommended. A flocculated emulsion may result in poor control and fruit burn.

A post-bloom scalicide spray on tangerines followed by a second application in summer is good insurance against green spots on the fruit next fall, because these spots are caused by purple and chaff scales.

Mealybug Control: If mealybugs are present, apply either parathion, 1.7 pounds or malathion, 5 pounds per 100 gallons before the fruit has grown up against the calyx where

(Continued on page 26)

* Written March 22, 1957. Reports of surveys by Harold Holtsberg, Fort Pierce; J. W. Davis, Tavares; K. G. Townsend, Tampa; T. B. Hallam, Avon Park; and L. M. Sutton, Lake Alfred.



Lower . . . Citrus Rates

By Herb Mosher

Reduced rates on citrus to certain important destinations (see table accompanying this article) have become effective as of March 20, 1957, according to announcement by Gordon Stedman of the Growers and Shippers League of Florida.

Rates from Lake Wales and Fort Pierce are shown in the table, to representative destinations.

Earlier it has been thought these rates would become effective on April 10, but the Interstate Commerce Commission recently advanced the effective date.

"These rate reductions are the result of an interest on the part of the Florida origin lines, the connecting lines, and principally as delivering carriers the Illinois Central, the Monon and the C. & E. I.," Mr. Stedman commented, adding: "These reduced rates effective March 20, on fresh fruit to Illinois, Wisconsin and Mississippi river points, such as St. Louis and south to Memphis, represent a real saving of approximately \$86 per car to fresh citrus fruit shippers."

As an example, Mr. Stedman said the new rate on oranges, per cwt., is \$1.02 compared with the former rate of \$1.21. The same substantial reduction applies to St. Louis, with comparable reductions to other points, he stated.

Rail Rates On Citrus Fruit From Lake Wales and Fort Pierce, Florida, Effective March 20, 1957. (Subject to X-206 Increases 5% Maximum 7c cwt.)

	Lake Wales		Ft. Pierce
Illinois			
Cairo	G 108	113	
	O 97	102	
	T 100	105	
Chicago	G 108	113	
	O 97	102	
	T 100	105	
Peoria	G 108	113	
	O 97	102	
	T 100	105	
Springfield	G 108	113	
	O 97	102	
	T 100	105	
Missouri			
St. Louis	G 108	113	
	O 97	102	
	T 100	105	
Hannibal	G 108	113	
	O 97	102	
	T 100	105	

Louisiana	G 108	113	Madison	G 116	120
	O 97	102		O 105	109
	T 100	105		T 108	112
Iowa			Milwaukee	G 114	119
Burlington	G 116	120		O 103	108
	O 105	109		T 106	112
	T 108	112	Oshkosh	G 116	120
Clinton	G 116	120		O 105	109
	O 105	109		T 108	112
	T 108	112	Rhineland	G 126	132
Dubuque	G 116	120		O 115	121
	O 105	109		T 118	124
	T 108	112	Michigan		
Keokuk	G 108	113	Escanaba	G 123	127
	O 97	102		O 112	116
	T 100	105		T 115	119
Wisconsin			Ironwood	G 126	132
Chippewa Fall	G 130	134		O 115	121
	O 119	123		T 118	124
	T 122	126	Ishpeming	G 125	131
Eau Claire	G 130	134		O 114	120
	O 119	123		T 117	123
	T 122	126	Indiana		
Green Bay	G 118	122	Evansville	G 108	113
	O 107	111		O 97	102
	T 110	114		T 100	105
La Crosse	G 130	134	Indianapolis	G 108	113
	O 119	123		O 97	102
	T 122	126		T 100	105

(Continued on page 23)

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Progress Report On Greasy Spot And Its Control⁽¹⁾

Greasy spot, a disease of citrus, has been present in Florida for many years (1), but was a minor problem until about 1944. By 1950 the disease was prevalent in many groves in the central part of the state. During the past 5 years it has become of econo-

W. L. THOMPSON, JOHN R. KING
AND E. J. DESZYCK
CITRUS EXPERIMENT STATION,
LAKE ALFRED, FLORIDA

turning dark brown and in time becoming black. These spots may vary from one sixteenth to more than a quarter of an inch in diameter, or may be massed over larger areas. In severe cases the spots are scattered over the whole leaf, but sometimes only the edge of the leaf is affected (Figure 1). Leaves affected with greasy spot may be found on any portion of the tree, but they are usually more abundant in tree tops. Trees with a high percentage of affected leaves have a yellowish cast, and the lesions may be confused with "yellow spot," a molybdenum deficiency.

The symptoms of greasy spot may be observed on the current year's growth as early as August, but are usually not very noticeable until October. As winter progresses, greasy spot becomes more severe and reaches a peak in February or March. In 1954, the severity of greasy spot increased about 30 per cent between December 2 and January 25. Experiments conducted on the east coast during the 1955-56 season showed that severity of greasy spot increased

15 per cent from October 17 to November 29 and 40 per cent from October 17 to March 8. Although a marked reduction of greasy spot resulted from the fungicidal sprays, the percentage increase in severity in sprayed plots was comparable to the increase in the checks.

INJURY: — The principal injury by greasy spot is a premature leaf drop. Sometimes approximately 85 per cent of the infected leaves drop during the fall and winter months.



DR. W. L. THOMPSON

mic importance in all citrus growing areas in the state.

SYMPTOMS: — Greasy spot symptoms are irregular, raised, dark spots or groups of spots scattered about on citrus leaves. The affected area on the current year's growth is at first a yellowish-brown spot, gradually



DR. E. J. DESZYCK

(1) Reprinted from proceedings of the Florida State Horticultural Society.

Heavy leaf drop is more common on young trees, but mature trees may also lose a high percentage of leaves. The number of leaves dropped is proportional to the severity of greasy spot.

CAUSE: — In 1948, Thompson (6) reported that greasy spot was more

in unsprayed plots, and in plots sprayed post-bloom with copper-oil without subsequent rust mite control, than in plots receiving a complete spray program (10). In later work, Fisher (2), Griffiths (4) and Thompson (8) (10) found that a summer copper application reduced greasy spot.

a June 15th application in a nearby grove was not effective; all copper sprays applied during July were effective; August applications were effective in one of four experiments and September applications were of little value in two experiments (10).

Purple mites in the fall and winter

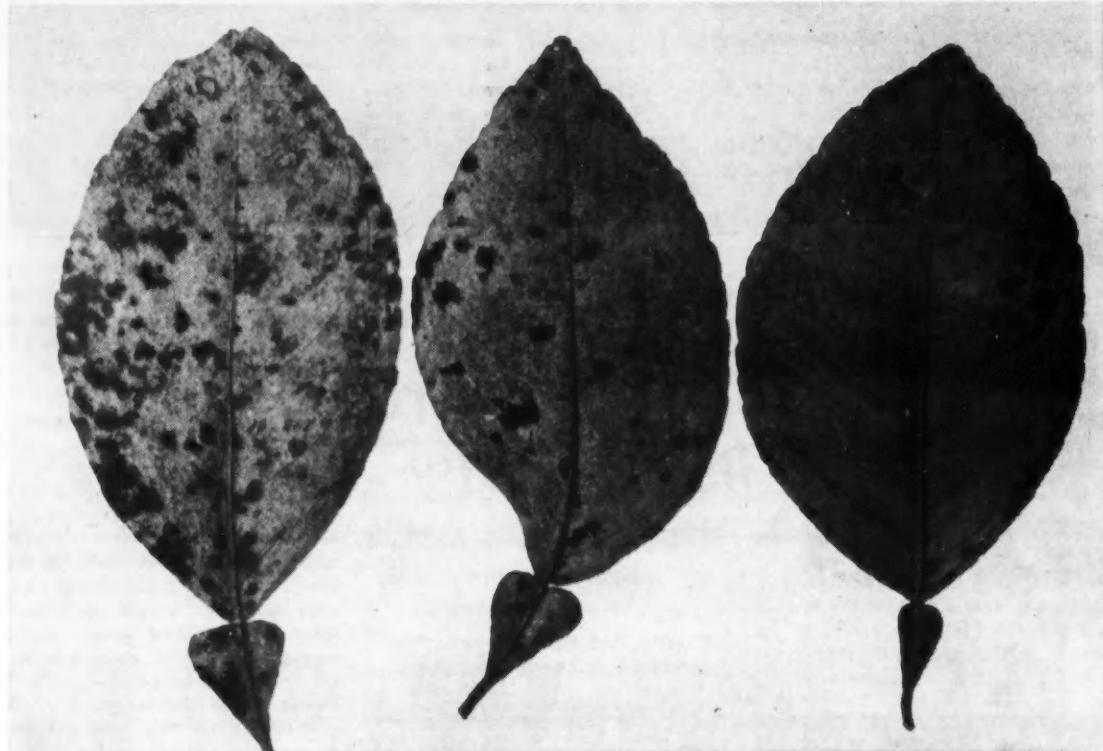


Figure 1. Leaves affected with greasy spot.

severe in unsprayed plots than in plots where rust mite *Phyllocoptera oleivora* (Ash.) were kept at low level with sulfur sprays. In 1952, Shioeiki Tanaka and Shunici Yamada (5) reported from Japan that greasy spot was caused by a fungus *Mycosphaerella Horii* (Hara.). Fisher, (3) also found a fungus associated with greasy spot. In later work Fisher (2), Griffiths (4) and Thompson (8) found that greasy spot was less severe where summer copper sprays and other fungicides had been applied, which further indicated that the injury was caused by a fungus.

It has not been determined whether rust mites and some species of sucking insects are a contributing factor. Leaves kept free of rust mites with Aramite, were less severely affected by greasy spot than mite-infested leaves (10). Areas around purple scale, red scale, and white fly are sometimes discolored and this injury may also be greasy spot.

CONTROL: — Earlier work showed that greasy spot was more abundant

Thompson (10) found that 0.75 pound of a neutral copper (53% metallic copper) was as effective as 1.5 pound per 100 gallons. It was also found that two summer applications were more effective than one. Captan and Ziram showed promise, especially with two applications (10). It was also found that greasy spot was less abundant where summer applications of oil emulsion were made than in unsprayed checks (3), (4), (8), (10).

Timing of the summer application has been an important factor in the degree of control (3), (4), (10). In 1954, a copper spray applied on June 10th was effective in one grove, but

months were more abundant following copper sprays applied in September than after earlier applications. Fall scale infestations were no higher following either a summer application of copper-oil or copper-parathion than where copper was omitted (10).

In 1954, there was no significant difference in the soluble solids and acid where copper was added to summer sprays than where it was omitted (10).

External fruit quality of Hamlin oranges was affected as a result of a summer copper application. Winston et al. (11) reported that "star melanose" was associated with Bor-

Table 1. Greasy Spot Control with Varying Amounts of Copper

Spray Dundee	Dates Wabasso	Treatments	Pounds Per 100 gal.*	Mean rating of Dundee	Greasy Spot Wabasso
July 1	July 9	No treatment		54.5	218.7
July 1	July 9	Copper	0.16	35.8	145.2*
July 1	July 9	Copper	0.21	41.7	133.3**
July 1	July 9	Copper	0.27	33.8	140.2*
July 1	July 9	Copper	0.39	25.2	102.2**
July 1	July 9	Copper	0.39	25.2*	102.2**
July 1	July 9	Copper	0.53	22.3*	142.8*
		1 S.D. 19:1		25.4*	60.5*
		1 S.D. 19:1		33.8**	80.9**

* Amounts of copper presented as metallic copper.

deaux mixture sprays. Later, Thompson (7) reported that "star melanose" developed as a result of applying sprays containing copper on melanose-infected oranges. In general "star melanose" on grapefruit has not been as severe as on oranges, but Fisher (2) reported that fruit quality in July and August sprayed plots was low, due to copper blackening and enlarging melanose lesions already present on the fruit when sprayed. The discoloration of blossom-end russetting on oranges following a summer copper spray was also a grade lowering factor.

EXPERIMENTS IN 1955

METHODS: — In 1955, two similar experiments were conducted to determine the minimum concentration of copper necessary to control greasy spot, the timing of one and two applications of fungicides, the effect of fungicidal sprays on subsequent mite and scale infestations and the effect of fungicidal sprays on subsequent mite and scale infestations and the effect on internal and external fruit quality. In Central Florida, near the town of Dundee, a young red grapefruit grove was selected for one of these experiments. For the other experiment, a red grapefruit grove was selected near Wabasso, on the East Coast. In each experiment the treatments were randomized and replicated three times. Each plot consisted of four trees at Dundee, and two trees at Wabasso. All necessary sulfur sprays were applied for rust mite control. Parathion and wettable sulfur were combined with the fungicides in all July sprays except where an oil emulsion was tested for control of both scale insects and greasy spot. Where a second fungicide spray was applied, the scalicide was omitted. All sprays were applied with high-pressure hand-gun sprayers.

Records of greasy spot severity were obtained from samples of fifty leaves from each tree. From twigs selected at random in gathering samples, the fourth leaf from the terminal was picked. Leaves were classified in the laboratory into four grades, based on the severity of greasy spot. The severity of greasy spot in each plot was then computed by multiplying the number of leaves in the light grade by one, the medium grade by two, and the severe grade by three. Products were added and then divided by the number of sampled leaves in each plot. Thus, the higher the rating the greater the severity of the disease.

COMPARISON OF MATERIALS:

In this article, amounts of copper are

designated as metallic copper and applied in the form of a neutral copper. In the 1955 experiments, the amount of copper per 100 gallons was varied from 0.16 to 0.53 pound. In the Dundee experiment, applications of 0.39 and 0.53 pound of copper per 100 gallons resulted in the highest degree of control and were more effective than 0.16, 0.21, or 0.27 pound (Table 1). In the Wabasso experiment, all copper sprays were about equally effective and significantly reduced the severity of greasy spot.

Some of the lower concentrations of copper applied in two different sprays at an interval of six weeks

neither concentration of oil was effective. Furthermore, where the copper spray followed the oil application, control was only equal to the July application of 0.16 pound of copper. There is no explanation why the oil was not effective in the Wabasso grove except it may have been applied too early in the summer. However, in both locations, a July application of 0.16 pound of copper plus wettable sulfur resulted in a high degree of control. Another very effective program at Wabasso was a June application of 0.27 pound of copper plus 5 pounds of wettable sulfur per 100 gallons and followed

Table 2. Comparison of One vs. Two Fungicidal Applications for Greasy Spot Control.

Plots	Materials*	Amounts per 100 gallons		Mean Rating of Greasy Spot	
		July	August	Dundee	Wabasso
1	No treatment	—	—	54.5	218.7
2	Copper	0.16 lb.	—	25.8	145.2x
3	Copper	0.16 lb.	0.16 lb.	21.9x	102.5xx
4	Copper	0.27 lb.	—	33.8	140.2x
5	Copper	0.27 lb.	0.16 lb.	15.0xx	93.8xx
6	Copper	0.39 lb.	—	25.2x	102.2xx
7	Oil 1.3% plus copper	0.16 lb.	—	21.2x	143.5
8	Oil	1.3 %	—	25.1x	187.7
9	Oil	1.3 %	—	—	—
10	Copper	—	0.16 lb.	10.4xx	141.0x
11	Oil 1.3 % plus copper	0.16 lb.	0.16 lb.	11.6xx	86.7xx
12	Oil 0.7% plus parathion	1.00 lb.	—	22.8x	199.8
13	Captan	2.00 lb.	—	40.8	209.8
14	Captan	2.00 lb.	2.00 lb.	26.0x	140.3x
15	Ziram	1.00 lb.	1.00 lb.	43.3	139.0
16	Ziram	1.00 lb.	—	36.0	159.8
17	Wettable sulfur	10.00 lb.	—	21.6x	121.7xx
18	Wettable sulfur	10.00 lb.	10.00 lb.	46.8	212.3
19	Neutral copper	0.27	—	52.0	191.7
	Lime-sulfur 1 gal. + Wettable sulfur		5.00 lb.	26.6x	101.0xx
		LSD 19:1	25.4x	60.51x	
		LSD 99:1	33.8xx	80.5xx	

Wettable sulfur 5 pounds plus parathion 1.7 pounds per 100 gallons were included in all July sprays except where oil was used. August sprays included wettable sulfur.

* Amounts of copper presented as metallic copper.

were more effective than one application of higher concentrations (Table 2). For example, at Dundee two applications of 0.16 pound of copper per 100 gallons made July 1 and August 19 were as effective as a single application at 0.39 pound made July 1. The highest degree of control from copper alone resulted from a July application of 0.27 pound followed by 0.16 pound on August 19. In the Wabasso experiment, where two copper applications were made, results were similar to those obtained at Dundee (Table 2).

Control with oil emulsion was variable. At Dundee, 1.3 per cent oil or 0.7 per cent oil plus 1 pound of 15 per cent parathion per 100 gallons were as effective as a single application of 0.39 pound of copper per 100 gallons. The most effective control from combinations involving oil was obtained with a July oil application followed in August with 0.27 pound of copper plus 5 pounds of wettable sulfur per 100 gallons. At Wabasso,

in July with oil emulsion.

One application of Captan at 2 pounds per 100 gallons was as effective at Dundee as one application of 0.16 pound of copper, but not as effective as 0.39 pound. At Wabasso, one application of 2 pounds of Captan per 100 gallons was not effective and two applications were no more effective than one application of 0.16 pound of copper.

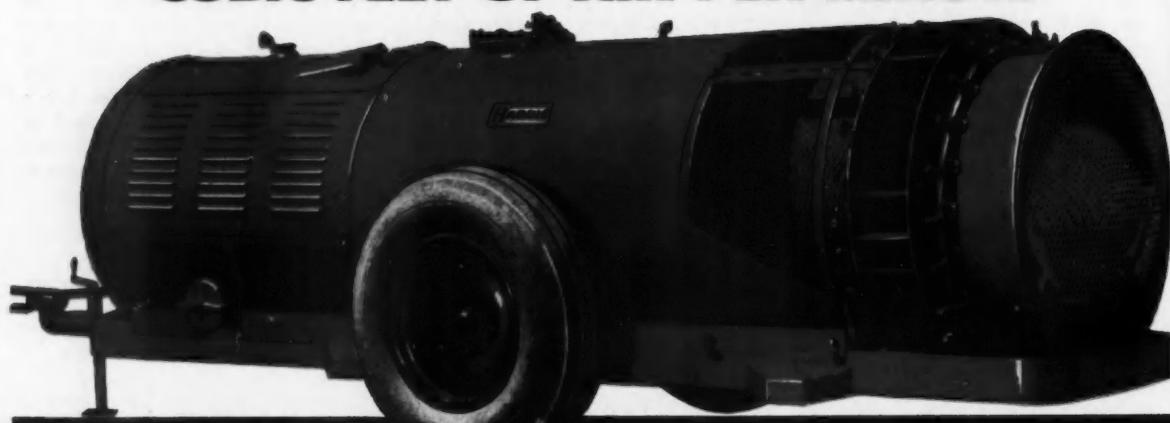
Ziram applied at 2 pounds per 100 gallons was not effective in either experiment, but two applications at 1 pound was as effective as a single application of 0.39 pound of copper. Nabam applied at 2 quarts, plus 1 pound of zinc sulfate per 100 gallons was as effective as 0.39 pound of copper at Dundee. At Wabasso, Ferbam was not effective at 2 pounds per 100 gallons.

TIMING OF SPRAYS: — As stated previously, it has been observed that control of greasy spot varied in different groves when the dosage of

(Continued on page 10)

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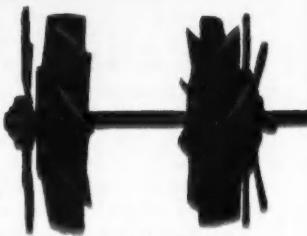
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Consumer Purchases Of Selected Fruits And Juices In November 1956

Consumers purchased about five per cent less from frozen concentrated fruit juices in November 1956 than in November 1955. Decreased purchases of frozen concentrated orange juice accounted for about half of the decline.

Total purchases of canned single-strength juices were almost unchanged in November 1956 as compared to November 1955. However, purchases of the two major canned single-strength citrus juices — orange and grapefruit — were down about 9 per cent.

In November 1956, householders purchased less frozen concentrated lemonade, but a substantially larger quantity of canned single-strength orangeade than in November 1955.

Consumer purchases of fresh oranges and grapefruit in November 1956 were down 17 and 20 per cent, respectively, from November a year earlier. However, purchases of lemons and tangerines were 12 and 44 per cent greater, respectively, than in the same month in 1955.

Frozen Juices, Refrigerated Juices and Ades

In November 1956 household consumers purchased 4.8 million gallons of frozen concentrated orange juice. This was the smallest quantity purchased in November in any year since 1953.

The decline in total purchases of frozen orange juice was due to only 28.6 per cent of United States families buying the product in November 1956 as compared to 30.2 per cent buying in November 1955. The average price paid in November 1956, 16.7 cents per 6-ounce can, and the average quantity purchased per family, 44.4 ounces, were both up fractionally.

Consumers purchased 70,000 gallons of frozen concentrated grapefruit juice in November 1956, a 29 per cent smaller volume than in October 1956. Data for this product was not obtained in 1955. The decrease in purchases was due to both a smaller average per family purchase — 17.3 ounces in November as compared to 19.9 ounces purchased in October — and to a slight decrease in the proportion of the nation's families buying this product. Prices averaged 13.8 cents per 6-ounce can.

Data for chilled orange juice were obtained for the first time in October 1956. Consumers purchased 1.3

UNITED STATES AGRICULTURAL MARKETING SERVICE

The data in this report represent estimated total purchases by household consumers only and do not include those by hotels, restaurants, hospitals or other institutional outlets. Data for single months are for 4-week periods (28 days) only, in order to permit comparisons between periods of equal length. This is the last month for which figures are available.

million gallons of chilled orange juice in November 1956, about 150,000 gallons more than in October. In contrast, purchases of frozen concentrated orange juice were down from October. While the proportion of families buying chilled orange juice decreased slightly, the average monthly quantity purchased increased by 24 per cent, to nearly 124 ounces per buying family. Price per quart increased 0.5 cent in November to 37.3 cents.

Householders purchased about 148,000 gallons of frozen concentrated lemonade in November 1956, about 58 percent less than in the preceding month, and 15 per cent less than was purchased in November 1955. Purchases of this product were the lowest for any November since 1952.

About 2 per cent of United States families bought frozen concentrated lemonade in both November 1956 and November 1955, but their average purchase of 20.7 ounces in November 1956 was 6 per cent less than the average quantity purchased in the previous November. The November 1956 price of 14.3 cents per 6-ounce can was 0.3 cent higher than the November 1955 price.

In November 1956, consumers purchased about 466,000 cases (equivalent No. 2 cans) of single-strength orangeade, a 4 per cent smaller volume than in October, but a 43 per cent increase over November 1955. The increase over November 1955 was due principally to a higher average purchase per buying family of 122 ounces compared to 108 ounces. The proportion of families purchasing orangeade also increased. The aver-

age price of 27.2 cents paid for a 46-ounce can was almost unchanged.

Canned Juices and Fruit

In November 1956, household consumers purchased 834,000 cases (equivalent No. 2 cans) of canned single-strength orange juice, an increase of about 8 per cent over October, but a 13 per cent decrease compared to November 1955. Except for August and October 1956, the November 1956 purchase volume was the smallest for any month since reporting began on this product in January 1949.

With the exception of October 1956, the proportion of families that bought orange juice was the lowest since the beginning of this series. Prices paid in November averaged 36.6 cents per 46-ounce can, about 10 per cent higher than in November 1955.

Consumer purchases of canned single-strength grapefruit juice also continued to decline. The November purchase of 813,000 cases (equivalent No. 2 cans) of grapefruit juice was 5 per cent less than in November 1955 and was the smallest quantity purchased in any month since December 1954. About 7.2 per cent of United States families bought grapefruit juice in November 1956, the smallest proportion of families since this series of reports began. The November 1956 price was 28.6 cents per 46-ounce can, 3.1 cents higher than for November 1955.

Householders purchased 42,000 cases (equivalent No. 2 cans) of single strength lemon juice in November 1956, a 31 per cent larger volume than in November 1955. Larger total purchases resulted from an increase in both the number of families purchasing and in the average quantity bought per buying family. In November 1956, consumers paid an average of 11.7 cents for lemon juice purchased in 5 1-2 and 6-ounce cans, 1.2 cents less than in November 1955.

Consumer purchases of prune juice in November 1956 amounted to 662,000 cases (equivalent No. 2 cans), up 20 per cent from November 1955. This increase was due to a rise in both the proportion of families buying and in the average quantity purchased by those families. Prices were unchanged from November 1955.

About 1.7 million cases (equivalent No. 2 cans) of tomato juice were pur-

chased by consumers in November 1956 as compared to 1.8 million cases in November 1955. This decrease in purchases was due to fewer families buying the product as the average quantity purchased was slightly larger than in November a year earlier.

Purchases of tomato juice in November 1956 slightly exceeded the combined purchases of single strength orange and grapefruit juices, and the number of families purchasing tomato juice was more than twice that purchasing either orange or grapefruit juice.

Data for canned grapefruit sections were obtained for the first time in October 1956. Householders bought 313,000 cases (equivalent No. 2 cans) of this product in November 1956 — an 18 per cent decrease from October. The 5.6 percent of families buying was down about 1 percentage point and the 53 ounces purchased per family was down 6 per cent compared with October. The price paid per 303 can, however, was almost unchanged at 18 cents.

Fresh Fruit

Household consumers purchased nearly 2.0 million boxes of fresh oranges in November 1956. This was a decrease of 17 per cent from November 1955, and was the lowest volume purchased in November since this series of data was begun in 1949. In comparison to November 1955, purchases of California-Arizona oranges were off 11 per cent; Florida oranges 21 per cent; and unidentified oranges were off 15 per cent.

In November 1956, 25 per cent of the Nation's families purchased 1.4 million boxes of fresh grapefruit. While this was about three times the October purchases, it was about 20 per cent less than November 1955 purchases. The smaller volume of purchases of grapefruit was largely due to a decrease in the proportion of families buying. Purchases of grapefruit from all producing areas were lower except for California-Arizona, which showed a 9 per cent increase.

Householders' purchases of fresh lemons in November 1956 were up 12 per cent from November 1955. The proportion of families buying lemons was almost unchanged, but those buying purchased more lemons than in November a year earlier.

Householders purchased 252,000 boxes of tangerines in November 1956, or 44 per cent more than in November 1955. The increased purchases were due to both a larger proportion of families buying and to a larger average purchase.

Dr. Paul Harding, Scientist, Receives Award Of Merit



DR. PAUL L. HARDING

Dr. Paul L. Harding, Principal Plant Pathologist with the Agricultural Marketing Service of the United States Department of Agriculture at Orlando, received a Superior Service Award accompanied by a cash award which was presented by Dr. Harold T. Cook, Head of the Quality Maintenance and Improvement Section, Washington, D. C.

The certificate reads "For Sustained Superior Performance in the Conduct of Valuable Research Studies on Maturity Standards and Measurements of Florida Citrus and Other Sub-Tropical Fruits Which Have Led to Improved Quality and Marketing of Florida Fruit."

Dr. Harding is in charge of the research work being conducted at Orlando and Miami on maturity standards, transit and storage of citrus and subtropical fruits.

He is research advisor to the citrus and subtropical industries, vice president in the Florida State Horticultural Society, director of Avocado, Lime and Mango research, and is on the Executive Committee to Sigma Xi (honorary research society) of Rollins College, Winter Park, Fla. Among his outstanding research publications are the series of Technical Bulletins on the Seasonal Changes in Florida Oranges, Grapefruit, Tangerines, Temple Oranges, and Tangelos.

Saw Manufacturer Hamilton Dissston bought four million acres of Kissimmee - Okeechobee - Everglades land for one million dollars in the year 1881.

PROGRESS REPORT ON GREASY SPOT AND ITS CONTROL

(Continued from page 7)

copper and time of application were similar. In 1955, at the Dundee grove, the summer flush of growth came out between the July 1 and the August 19 applications. Where 0.27 pound of copper was used, the August spray was more effective than one applied in July. Where as little as 0.16 pound of copper followed the July application, there was a marked increase in the degree of control. In another experiment in a 40-year old grapefruit grove, various amounts of copper were applied between June 21st and September 12th. In this grove, there was little or no growth after the spring flush and there was no difference in the degree of greasy spot control regardless of the concentration of copper or the timing of the application.

Some control of greasy spot may be expected from a post-bloom application on spring growth, but not enough to depend upon where greasy spot is severe. On April 19, 1955, several different neutral copper compounds were combined with lime-sulfur to determine whether these mixtures would cause a leaf drop and burn. On December 21, leaf samples were graded for the severity of greasy spot. Greasy spot was as severe where 1 gallon of lime-sulfur was used as in the untreated check, but less severe in three different plots where either 3.0 pounds of copper sulfate, 1.0 pound of copper oxide, or 1.5 pounds of basic copper sulfate was mixed with 1 gallon of lime-sulfur per 100 gallons. A mixture of basic copper sulfate and wettable sulfur was not as effective as any of the lime-sulfur-copper mixtures. Unfortunately, the lime-sulfur-copper combination caused burn and leaf drop and it is not recommended in either a spring or summer spray, but this experiment did demonstrate that, if the copper adheres to the leaves for a long period of time, greasy spot will be less severe on the spring flush of growth than on untreated trees.

EFFECT ON FRUIT QUALITY: — In 1955, summer copper sprays were applied on Pineapple oranges at the Citrus Experiment Station. This grove had received a post-bloom copper spray and the fruit was not severely affected with melanose. The amounts of copper per 100 gallons were 0.16 pound, 0.27 pound, 0.39 pound and 0.53 pound, respectively. Dates of application varied between June 28th and August 8th. There

was very little discoloration where copper was used in amounts between 0.16 pound and 0.39 pound per 100 gallons. However, where 0.53 pound was used, there was a definite discoloration of melanose lesions.

Field observations were made at the Indian River Field Laboratory where different amounts of copper had been applied on Valencia oranges. The concentrations of copper sprays were the same as at the Citrus Experiment Station. Where 0.16 pound per 100 gallons was applied, either in one or two applications, there was no adverse effect. However, with 0.27 or 0.39 pound there was a moderate amount of discoloration. When 0.53 pound of copper was used melanose lesions were very dark, resulting in the definite grade lowering factor. The timing of sprays was not a factor since there was as much discoloration following a July 1 spray as there was where the application was made as late as August 8. On grapefruit, a low percentage of melanose lesions had a darker color than normal, but it was not a grade lowering factor. Summer copper-oil applications darkened corky lesions more than the wettable sulfur-copper combinations, but the grade was not affected where fruit was originally free of melanose lesions. Even though there was a minimum amount of discoloration of lesions and wind sears in this experiment, a summer copper spray is not recommended where the crop is to be sold on the fresh fruit market.

There was no significant difference in the amounts of either soluble solids or titratable acid in pink grapefruit and Pineapple oranges where summer copper sprays had been applied to untreated trees.

EFFECT ON SUBSEQUENT MITE AND SCALE INFESTATIONS: — Purple mite, *Metatetranychus citri*, was more abundant in September 1955 following an August copper spray than following earlier applications (10). On December 21, 1955, in the Dundee grove, there was no difference in the percentage of infested leaves between plots sprayed with copper-wettable sulfur in either July or August and where the copper was omitted in the wettable-sulfur spray. In all plots where oil was used, alone or in combination with copper, the mite population was not as high as where copper-wettable sulfur-parathion had been used.

Scale control has been as satisfactory, when infestations were low in the spring, where fungicides have been included in the summer scal-



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cide sprays as where they were omitted.

DISCUSSION

Timing of fungicidal applications appears to be one of the most important factors in greasy spot control and more knowledge is necessary about the life cycle of the fungus before definite recommendations can be made. In Florida, at the present time, it is not known when or how long the leaves are susceptible to infection. There are usually two to four flushes of growth that need protection between February or March and August. If a post-bloom copper is applied for melanose control, that application will protect the spring foliage from greasy spot infection for a certain period. If the second flush develops in May or early June, then a July copper spray of about 0.4 pound per 100 gallons may be more effective than an August application. For instance, in 1954, July applications were more effective than August applications in three of four experiments. This does not mean that each summer the copper spray should be applied in either July or August, but where only one summer copper is to be applied, it should be delayed until after the summer flush is out.

Two low-dosage summer copper sprays can be used to advantage where no post-bloom copper is applied. If parathion is used as a scalicide and it is necessary to spray in June or early July, add the equivalent of 0.16 pound of metallic copper, in the form of a neutral copper per 100 gallons, and in four to six weeks follow with 0.2 pound of copper plus wettable sulfur. If oil is used as a scalicide, then follow that application in four to six weeks with a low-dosage of copper. The application following the scalicide spray is not necessarily an extra operation because a sulfur spray for rust mite control is usually necessary following a June or July scalicide spray. Since oil was not effective at Wabasso in the one experiment conducted there, it is suggested that 0.2 pound of copper be added to the summer oil and followed in four to six weeks with the same amount of copper in a wettable sulfur spray.

The oil-copper combination should not be applied on oranges to be sold on the fresh fruit market. However, there has been no injury other than the affect on corky tissue where wettable sulfur or oil emulsion has been supplemented with neutral copper. The grade of both oranges and grapefruit was not affected when

fruit was free of melanose lesions and blossom-end russetting when the copper spray was applied.

The organic fungicides tested have not been as effective as copper, especially with one application. Even though single applications of the organic fungicides Captan and Ziram have not been as effective as copper and are more expensive, there may be a place for these materials. On oranges, where the crop is grown for the fresh fruit market, two applications of one of these organic fungicides may be used.

SUMMARY

Greasy spot, a disease of citrus, causes a premature leaf drop. Symptoms are raised, yellowish-brown to black spots most prevalent on the undersides of leaves.

Greasy spot infection was reduced with a July or August application of 0.4 pound of copper per 100 gallons, but two applications, one in July at 0.27 pound and a second in August at 0.16 pound were more effective. A July oil emulsion was as effective in Central Florida as one copper spray, but was not effective on the East Coast. Very effective treatments were either July oil followed in August with 0.27 pound of copper or June copper followed in July with oil. Also effective were either two applications of Captan at 2 pounds, or Ziram at 1 pound per 100 gallons.

Summer copper sprays did not affect soluble solids or acid in the juice of Pineapple oranges or red grapefruit. Melanose lesions were noticeably darkened and enlarged

where 0.4 pound of copper per 100 gallons was applied on oranges, but there was very little adverse effect following either one or two applications of 0.16 pound of copper.

Subsequent purple mite infestations were no higher in December where copper was included in the summer scalicide spray than where it was omitted.

In 1955, scale infestations were at a low level when the scalicides were applied and the addition of copper to the summer sprays did not affect scale infestations by October.

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12th Annual Gulf Coast Growers Institute

The Twelfth Annual Gulf Coast Citrus Growers Institute will be held at Dade City on April 26, for which the following program has been announced. This is an important meeting of Florida citrus factors and indications are that it will be well attended.

Following is the indicated program:
 Date — April 26, 1957.
 Time — 9:00 A. M. to 5:00 P. M.
 Place — Agricultural Center, Dade City, Florida.

PROPOSED PROGRAM

1. Current Status of Spreading Decline — Al Whitmore, Member of Industry Committee on Decline.
2. Selecting, Planting and Managing Citrus Trees for Profit — Jack T. McCown, Assistant Horticulturist, University of Florida.
3. Current Status and Future Outlook for the Med-fly Eradication Program — G. G. Rohwer, Area Supervisor, USDA, (Administering the Program).
4. Progress Report On Irrigation Experiments — E. J. Deszyck, Associate Horticulturist, Citrus Experiment Station.

5. Citrus By-Products — Jos. W. Kesterson, Associate Chemist, Lake Alfred Citrus Experiment Station.

6. Summer Application of Zineb for Control of Citrus Fruit Russet — Fran. E. Fisher, Asst. Plant Pathologist, Citrus Experiment Station.

7. Handling Cold Injured Citrus Trees — A Panel — Moderator, Fred P. Lawrence.

Panel Members:

George McClure, Libby, McNeil & Libby.

Cecil Bishop, Brooksville CGA.

Morton Howell, Pasco.

Al. Wilson, Minute Maid.

The date for the Citrus Sub-Tropical Institute has been set for June 6 and 7 at Camp Cloverleaf, near Lake Placid.

PROGRESS REPORT ON GREASY SPOT AND ITS CONTROL

(Continued from page 12)

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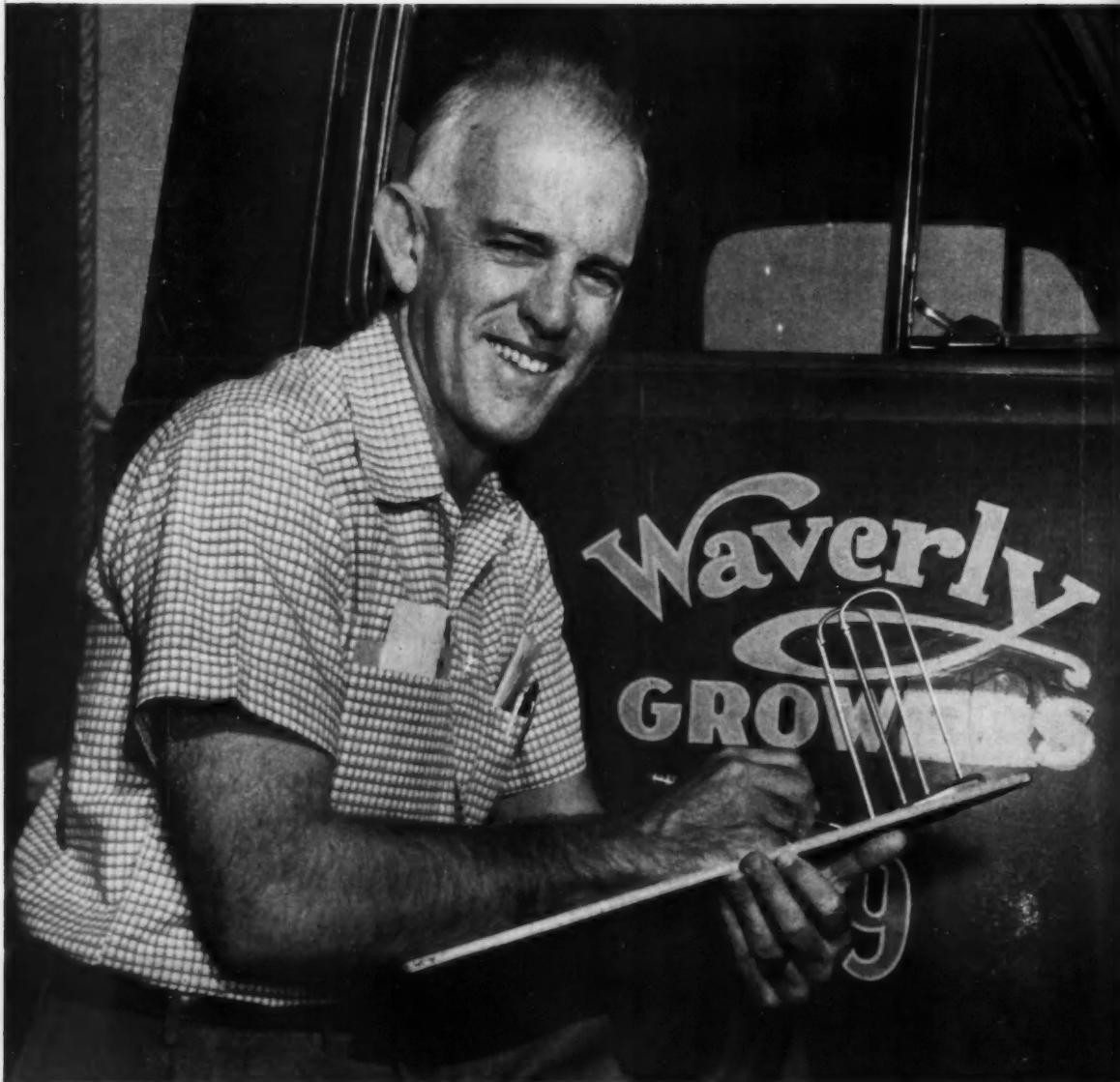
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Charles D. Kime, Jr., (below), Production Manager, Waverly Growers Co-Op, Waverly, Florida, says:

"ORTHCIDE gave us excellent control on lemon scab and anthracnose in our nursery," reports Mr. Kime. "All of the ORTHO products we have used have consistently been of the highest quality. Technical field service supplied us by the ORTHO people has been of extreme assistance to us as well as the whole citrus industry."



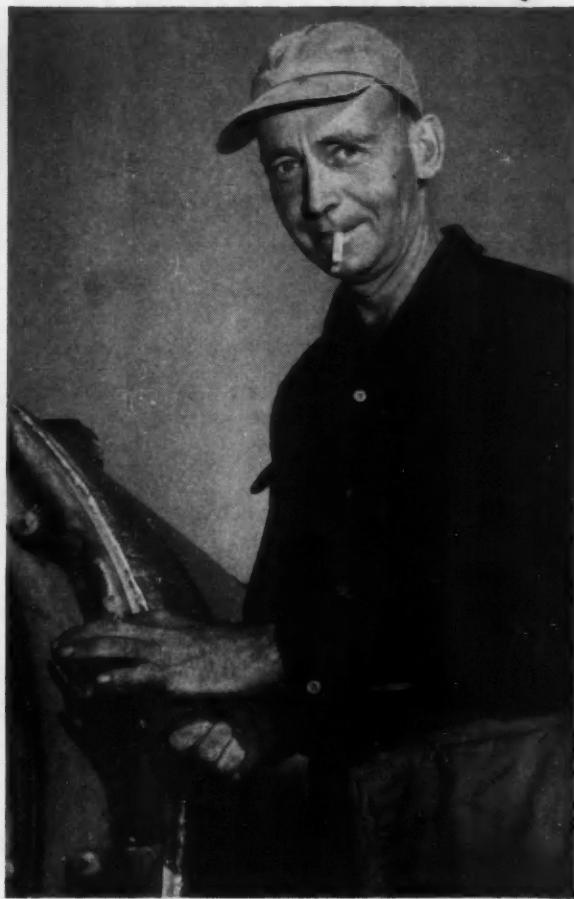
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"For increased yields of highest quality fruit, I use ORTHO products," states J. H. Hooten of the Hooten Grove Service, Clermont, Florida (pictured above, right, with ORTHO Fieldman Charles Ashley). "I've used ORTHO products for the past five years with complete confidence," says Mr. Hooten.



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Movement Of Citrus Trees From Florida Nurseries

Mr. Zach Savage, Agricultural Economist, Florida Agricultural Experiment Stations, has just issued a most interesting and valuable booklet setting forth the movement of citrus trees from Florida nurseries from July 1, 1928 to June 30, 1956. This report shows a gradual, and sometimes remarkable, increase from year to year, with only a very few trifling setbacks during this twenty-eight year period.

The booklet contains numerous tables showing the movement by varieties, by counties, by types and much other valuable data. There has been a marked increase in the movement of orange trees with valencias leading the way, both in number of trees and percentage of increase. On the other hand, grapefruit has shown a steady decline, particularly in the past five years.

During the past few years there has been a remarkable increase in the planting of lemon trees by Florida



ZACH SAVAGE

citrus growers, with temples and tangerines showing decided increases during the past three years.

Citrus Trees Moved from Florida Nurseries to Florida Destinations
July 1, 1928 to June 30, 1956

Year	Oranges	Grape-fruit	Man-darin	Limes	Lemons	Tangelos	Other Citrus	Total
1928-29	699,343	305,641	271,403	8,348	2,020	904	74,879	1,362,538
1929-30	296,306	328,991	139,877	8,547	1,907	899	9,389	785,916
1930-31	401,023	264,803	91,725	11,187	3,031	1,340	15,161	788,270
1931-32	431,123	72,657	62,492	25,687	3,771	1,134	6,985	603,849
1932-33	499,864	144,412	53,391	47,785	4,313	1,588	11,237	762,590
1933-34	440,541	158,359	74,187	40,616	22,438	1,818	16,101	754,060
1934-35	351,289	89,468	30,880	33,666	11,480	3,065	7,865	527,719
1935-36	531,081	153,469	34,128	61,207	29,472	1,989	11,047	822,393
1936-37	740,974	106,296	38,427	123,054	19,381	5,295	16,560	1,055,987
1937-38	799,439	150,557	26,507	80,034	13,407	3,515	10,593	1,084,052
1938-39	512,526	87,876	21,795	47,432	8,600	3,431	19,665	701,325
1939-40	403,775	80,588	21,819	26,899	6,438	3,294	16,555	559,365
1940-41	592,208	85,954	36,156	26,550	2,961	5,233	15,187	764,249
1941-42	579,809	64,009	58,413	14,412	2,751	6,304	24,130	749,888
1942-43	533,802	104,754	55,545	14,406	2,229	8,379	9,507	728,622
1943-44	701,977	136,637	65,184	11,931	3,287	18,015	9,291	946,322
1944-45	611,854	125,135	61,391	15,190	2,109	11,451	9,907	857,037
1945-46	722,550	223,117	96,302	20,874	1,970	13,849	7,912	1,086,574
1946-47	728,882	281,637	128,895	34,755	6,328	6,259	10,104	1,196,860
1947-48	518,383	238,602	137,151	26,392	4,224	6,220	12,813	943,785
1948-49	399,444	217,605	148,337	33,635	5,923	11,020	14,815	830,779
1949-50	975,382	383,805	178,188	21,180	6,875	31,236	17,502	1,614,168
1950-51	917,218	344,256	163,873	17,206	7,351	30,159	19,714	1,499,777
1951-52	608,111	220,615	98,378	25,696	6,040	23,746	21,527	1,004,113
1952-53	698,629	217,162	78,669	35,256	6,908	24,305	30,203	1,091,192
1953-54	1,102,570	158,372	132,017	87,232	31,621	34,845	19,169	1,565,816
1954-55	1,445,932	90,426	180,387	71,559	63,333	46,035	23,187	1,926,829
1955-56	1,568,297	59,101	189,979	27,693	29,398	40,428	19,751	1,932,637

Polk continues to lead all counties in number of trees and in new plantings, with Orange county a close second and Lake county not far behind in third place.

With nearly 2,000,000 citrus trees planted in Florida in the past year, and with demand on nurseries still increasing, it is not hard to visualize the tremendous increase in volume of production when all these newly planted trees come into bearing. Again the question arises: Will demand keep up with production? That question has arisen before—and has been successfully answered.

Below will be found a table showing the movement from nurseries for the past twenty-eight years as compiled by Mr. Savage:

Data of this publication were reported by Florida nurserymen to the Nursery Inspector of the Florida State Plant Board, Gainesville as copies of invoices of nurseries when shipped.

(Continued on page 17)

Harry Willson Receives Certificate Of Merit...



HARRY WILLSON

Harry Willson, veteran market news reporter whose daily bulletins keep Florida's big citrus industry abreast of current market conditions, has been awarded a "Certificate of Merit" in recognition of his long service to the industry.

The jovial and popular Market Reporter operates the Federal-State Market News Service in Lakeland, a cooperative venture between the Florida State Marketing Bureau and the U. S. Department of Agriculture.

The award was made by the U. S. Department of Agriculture and reads in part "for sustained superior performance in providing a highly effective Market News Service to the various fruit and vegetable industries." The USDA, however, pinpointed its award in a letter of transmittal which stated that the tribute was "for outstanding service to . . . the citrus industry of Florida."

The genial Willson has spent over 30 years in the reporting of market news. He entered governmental service with the Agriculture Department in 1924 and was assigned to Chicago for his training. During this instructional period he saw service in Philadelphia, New York, Presque Isle, Me., Atlanta, Los Angeles, Fresno, and Rochester, N. Y.

In 1928, Willson was transferred to Florida where he has remained ever since. Prior to his present Lakeland location, he saw service in Winter Haven and Orlando. He spends

his summers, the off-season of the citrus industry, reporting on the peach crops in Spartanburg, S. C., and Martinsburg, W. Va.

Willson is a native of Spring Valley, Minn., but calls himself a Florida "cracker" now. Almost as well known as Harry is Mrs. Willson who assists in compiling the voluminous data necessary to the efficient operation of the Market News Service.

MOVEMENT OF CITRUS TREES FROM FLORIDA NURSERIES

(Continued from page 16)

ping trees to their destinations. Only invoices to Florida destinations were included in these data. Personnel of

the Department of Agriculture Economics, Florida Agricultural Experiment Stations, Gainesville assembled these data from the invoices in the files of the Florida State Plant Board, Gainesville as here shown.

Properly cooked vegetables supply essential vitamins and minerals in your diet. To insure a nutritious and appetizing vegetable, be sure to start with a fresh product, which is firm, crisp, and bright in color and free from decay. Whenever possible pare, cut, or otherwise prepare the vegetable just before cooking.

in its **75th year...GLEN OFFERS MORE!**

A grove properly planted from Glen stock is a thing of beauty and a joy — profitwise — for many, many years.

Take advantage of the finest stock available when setting out new or enlarged grove operations. But remember the great demand existing for Glen stock, and order now for assured delivery in future years.



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Executive Offices: WINTER HAVEN, FLORIDA

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Largest Citrus Nurseries in the World

Citrus Plantings Growing; More Advertising Needed

In his weekly letter to members of Waverly Growers Cooperative, President W. C. Pedersen brings out some pertinent facts which should be of interest to every citrus grower in the State. His letter is reprinted below:



W. C. PEDERSEN
PRESIDENT WAVERLY GROWERS
COOPERATIVE

Recently the Legislative Committee of the Florida Citrus Commission and of the Florida Citrus Mutual recommended to the Board of Directors of Florida Citrus Mutual that 14 items be presented to the 1957 Florida Legislature for its approval. Of all the matters presented, the most important to the Florida citrus industry was the recommendation to increase the advertising tax on oranges from three cents to five cents.

Mr. Zach Savage, Agricultural Economist of the Florida Agricultural Experiment Stations, has recently published a booklet on the "Movement of Citrus Trees From Florida Nurseries From July 1, 1928, to June 30, 1956." This report has some very interesting figures in it, and in my opinion they back up the need of additional advertising for our Florida citrus fruit.

During the past six years ending June 30, 1956, there have been 9,020,364 citrus trees moved from Florida nurseries. If you figure 60 trees to an acre, this would equal about 150,000 acres of citrus trees planted in Florida during the past six years. Of this large planting, 6,338,817 trees were oranges, or over two-thirds of

the trees planted. The remaining one-third was grapefruit, mandarins, limes, lemons, tangelos, and other varieties.

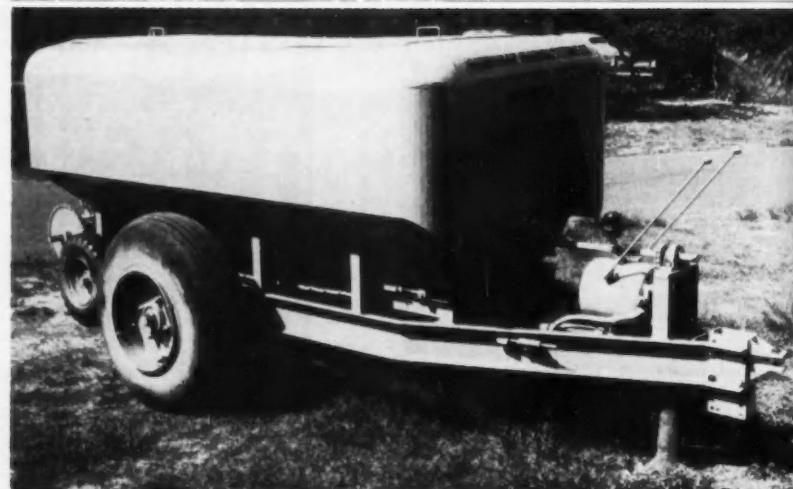
The number of lemon trees moved from Florida nurseries the past six years was interesting. It amounted to 144,651 trees — quite a lot of lemon trees in the face of California's over-production. This number of lemon trees is equal to about 30 years of previous movement from Florida nurseries.

There has been a feeling that Polk County was giving away its leadership in the production of citrus fruit to Orange and Lake Counties, but the movement of orange trees from nurseries the past year would not indicate this to be true. The following orange trees were moved to the three leading citrus counties in 1955-56: Lake County, 250,754; Orange County, 266,408; Polk County, 346,987. Grapefruit trees moved from nurseries to the three counties last season were as follows: Lake County, 2,516;

Orange County, 1,986; Polk County, 10,059.

There has been a lot of talk the last year about the new fruit with concentrated juice. It is called the "Murcott Honey orange." It has the appearance and shape of the tangerine, but the skin is fastened tightly to the meat of the fruit, and the juice is about the color of tangerine juice. The juice of most oranges has a Brix that reads from 9 to 15. These Murcott Honey oranges are supposed to have a Brix reading of from 16 to 20, or about one-third more solids than are found in most oranges. This type of orange should be in great demand by concentrators to bolster the color of orange juice and boost the amount of concentrate made per box of oranges.

Last season there were 24,890 Murcott Honey trees moved to Lake County; 23,459 to Orange County; 6,796 to Polk County. In all of Florida there were 60,016 Murcott Honey trees planted, compared to 59,101 grapefruit trees of all varieties. Yes, I believe we will need the additional two cents per box for advertising oranges when all these trees come into bearing.



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LAKELAND, FLORIDA

Orange And Hardee Counties Citrus Census Released

The Florida Citrus Commission has released the results of the State Plant Board's citrus survey in Orange and Hardee Counties, the tenth and eleventh citrus belt counties to be covered in the Board's survey project started early last year.

In cooperation with the State Plant Board, the Citrus Commission, Florida Citrus Mutual, the U. S. and Florida Departments of Agriculture, and the Florida Agricultural Experiment Station are participating in the survey which will eventually include all counties in the Florida citrus belt.

The Orange County report lists a total of 4,042,874 orange trees in commercial groves, and 321,182 grapefruit trees in commercial groves in the county. Also listed in the report was a total of 241,866 Mandarin variety trees; 316,728 trees bearing Temple, Tangelo, and other hybrid fruits; 1054 trees bearing Kumquats, Limequats, and other mixed fruits; and 9182 acid fruit trees, of which 3040 were Sour Orange, 2037 Persian Lime, and 2036 Meyer Lemon.

and 2126 trees producing Villa Franca Lemons.

Hardee County orange trees in commercial groves number 1,210,087, while grapefruit trees total 73,864 in the county. The report also listed 21,549 bearing trees of the Mandarin type; 18,738 trees bearing Temple, Tangelo, and other hybrid fruits; 1054 trees bearing Kumquats, Limequats, and other mixed fruits; and 9182 acid fruit trees, of which 3040 were Sour Orange, 2037 Persian Lime, and 2036 Meyer Lemon.

The report stated that Orange County has a total net commercial acreage in citrus of 68,505 acres; has 19,632 trees in abandoned groves; and 125,541 diseased trees throughout the county.

Hardee County has a net commercial citrus acreage of 22,300 acres; has 14,156 trees in abandoned groves; and 88,314 trees diseased in the county.

Other counties thus far included in the project are Polk, Lake, Pinellas, Highlands, Lee, Hendry, Collier, Broward and Dade Counties.

Including today's reports on Orange and Hardee Counties, the combined totals of counties surveyed thus far indicate a total of 25,733,211 citrus trees, of which 17,751,122 are bearing commercial oranges.

Net citrus acreage for the 11 counties was placed at 371,572 acres; 813,992 trees were listed in the diseased category; and 269,829 trees in abandoned groves.

The citrus survey, which has been underway since early last year, will encompass an estimated 40,000,000 citrus trees when completed. The State Plant Board had originally predicted the survey would be completed this month, but work on the Mediterranean fruit fly problem during the past year temporarily sidetracked the survey.

Seventeen electric power suppliers are donating electric materials to county agents in 60 counties to be loaned to 4-H Club members. Using the materials will help the 4-H members learn more about the use of electricity in their projects, according to A. M. Pettis, farm electrification specialist with the State Agricultural Extension Service.

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Florida Favorite Fertilizer is specially formulated for Florida soil. There's no excess or shortage of the minerals your groves need. F.F.F. Brand is made by men who know Florida crops and soil. For top yield and quality, give your citrus crop a profitable boost with Florida Favorite Fertilizer.

Our fleet of trucks will deliver your fertilizer to your groves **when** you need it and **where** you need it. That's the famous F.F.F. "on the spot delivery."

Before you buy, check F.F.F. Brands — you'll grow money on your citrus trees.

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favorite fertilizer**

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CITRUS GROVES
FIELD CROPS
PASTURE GRASS
TRUCK FARMS



Exports Of Florida Oranges Set All-Time Record

More Florida oranges are being shipped overseas during the present season than ever before in history, according to Florida Citrus Mutual.

Robert W. Rutledge, Mutual general manager, said figures compiled by the cooperative's export specialist, Martin Hearn, indicated orange exports this season would total 3,550,000 boxes.

"If this estimate proves correct," Rutledge said, "it would mean a new-



R. W. RUTLEDGE

all-time record in the volume of Florida oranges shipped overseas in a single season. Last season holds the record so far with an actual total of 2,322,895 boxes."

The figures cover both fresh oranges and canned orange products, Rutledge said, with 1,750,000 boxes forecast as fresh shipments and the remainder, or 1,800,000 boxes, shipped in the form of processed products.

A million boxes is represented by shipments of pasteurized and frozen concentrate, with the rest of the oranges used in processed products going into canned single-strength juice or some similar item.

Canada is not included in the figures, Rutledge said, as that country is classified as part of the domestic market.

Grapefruit exports will be somewhat smaller this season than last, the Mutual official said, principally

because the crop is smaller and domestic fresh and processed outlets are eagerly taking all available fruit.

Exports of grapefruit this season are estimated at 825,000 boxes, including 225,000 boxes in fresh form and 600,000 boxes in single-strength juice or canned sections.

Grapefruit exports last season totaled slightly more than 1,200,000 boxes.

Rutledge said Hearn's figures were compiled from information obtained from the Florida state plant board and two federal agencies, the foreign agricultural service of the U. S. Department of Agriculture and the International Cooperation Administration, which administer portions of laws passed by congress to boost exports of American agricultural products.

Exports of oranges in both fresh and processed form will show increases this season, the Mutual official said. The fresh orange figure of 1,750,000 boxes compares with 1,309,585 boxes actually shipped overseas last season. The estimated 1,800,000 boxes to be exported in the form of processed products compares with slightly more than a million boxes last season.

"Every box of oranges or grapefruit we ship overseas helps stabilize the over-all price structure," Rutledge said, "including the value of fruit on the tree, by relieving the domestic market to that extent."

Rutledge said approximately 1,200,000 boxes of oranges had been shipped so far in fresh form and another 1,300,000 boxes in processed products. He estimated another 550,000 boxes would be shipped fresh and 500,000 boxes in processed form during the remainder of the season.

Florida's orange exports took a substantial swing upward last season when severe cold weather damaged Spain's crops and curtailed its production this season.

USDA EXTENDS TIME FOR COMMENTS ON PROPOSED AMENDMENTS OF PACA REGULATIONS

An extension of time from March 25 to May 25 for filing views and comments on proposed amendment of regulations (other than Rules of Practice) under the Perishable Agri-

cultural Commodities Act was announced recently by the U. S. Department of Agriculture.

Department officials said the extension will give the industry additional time for further study and analysis of the proposed revisions, but that the extra time should not be used merely for postponing study of the revisions and the submission of comments.

Officials also pointed out that May 25 is the terminal date only for the filing of comments and suggestions. The Department's final revisions will be published after May 25, and will not go into effect until at least 30 days after the final regulations are published in the Federal Register.

Copies of the proposed revisions upon which comments are requested may be obtained from the Fruit and Vegetable Division, Agricultural Marketing Service, USDA, Washington 25, D. C.



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Chilled Orange Juice To Be Advertised Nationally

Chilled Florida orange juice, 90 per cent of which is distributed through local dairies, will be advertised and merchandised nationally for the first time, it was announced by the Florida Citrus Commission.

Paul S. Patterson, advertising director of the Commission, pointed out that the product has had wide distribution and heavy volume for the past three years, but that the Commission has withheld advertising until its authority to regulate the product could be established by the courts.

"Our Commission was reluctant to advertise or promote a product over which it had no quality control," Patterson said. "Now that the Commission's power to enforce quality standards and prohibit adulteration has been established, we are very anxious to sing the praises of Florida chilled orange juice to American consumers."

The advertising campaign will include full-page, four-color ads during May in BETTER HOMES AND GARDENS and LADIES HOME JOURNAL, plus half-page ads in Sunday magazine sections of New York NEWS, Philadelphia INQUIRER and Chicago TRIBUNE.

Supporting the campaign will be a well-balanced merchandising program, utilizing the Commission's 65-man field merchandising force located throughout the United States and Canada. Some 300,000 standard display pieces in addition to 200,000 special pieces designed by the Commission for use in dairy departments, are expected to be distributed before June 1.

"Chilled Florida orange juice is another important Florida citrus item which lends itself to the dairy case, and should provide plus sales for retailers and dairies," said Frank D. Arn, FCC merchandising director. "At present, it is not considered a staple, but we feel sure that through our efforts it will fast become a much sought-after product."

Patterson cautioned that the Commission "has no control over orange processing done outside the State of Florida."

"Some products processed in Northern markets and now being sold as pure orange juice are little more than orange ade," he said. "On the other hand, several important distributors of chilled orange juice are reconstituting it from frozen

concentrate near the distributing centers and voluntarily conforming to the Florida Citrus Commission standards."

Patterson added that about 90 per cent of total chilled orange juice volume is said to be distributed through local dairy companies which sell it on their retail routes and also supply retail food stores and institutions from their wholesale routes.

During the 1955-56 season it is estimated that some 5,000,000 boxes of Florida oranges were used to produce 25,000,000 gallons of chilled orange juice. Sales this season are running considerably ahead of a year ago.

Chilled Florida orange juice thus becomes the tenth citrus product advertised and merchandised by the Commission.

Poor fence keeping leads to a loss of livestock and unnecessary cuts, bruises and scratches for the farm family.

ONE MORE REASON
why JOHN BEAN
Speed Sprayers are

Tops in Citrusland!



More Air Volume,
Better Spray
Delivery

Speed Sprayer air passages are aerodynamically designed to use the full power of engine and fan. Compare the air volume they deliver per horsepower and you'll have one of the keys to their superior coverage and penetration of trees.

At the Winter Haven Citrus Exposition in 1955, the Grand Sweepstakes and six of the seven District Blue Ribbon Awards for quality fruit went to groves using John Bean Speed Sprayers. These growers have learned that they can depend upon their Speed Sprayers to help them meet their spraying schedules fast and effectively at minimum cost. It's a major factor in their production of profitable, top quality fruit. Let us demonstrate, at your grove, how a Speed Sprayer can be a good investment for you. Call or write today.

HANDY CALCULATOR for figuring concentrate and dilute spray solution is yours for the asking. Write for your copy.

SPEED SPRAYER FACTORY, ORLANDO, FLORIDA

John BEAN DIVISION OF
FOOD MACHINERY AND CHEMICAL CORPORATION
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NOTES OF THE TRADE

NITRATE MANUFACTURED IN PENSACOLA PLANT

Ashcraft-Wilkinson Co., Atlanta, Ga., who are exclusive sales agents for the nitrogen products produced by Escambia Chemical Corporation of Pensacola, Fla., state that this plant is Florida's first synthetic nitrogen producing plant.

Their report states that this Florida plant involved an expenditure in excess of twenty million dollars, that it was produced entirely with private capital and was designed to serve the agricultural interests of Florida and the Southeast.

The Escambia plant has demonstrated it is a dependable source of supply for ammonium nitrate fertilizer in the form to be used by fertilizer manufacturers, as well as the solid prilled 33.5 percent ammonium nitrate fertilizer sold under the trade name Ammo-Nite.

The sales agents report that the location of this plant, so close to points of usage by Florida growers, has saved our growers vast sums of money because of the reduction in the delivered price of nitrogen to Florida growers.

Sales of Ammo-Nite are reported to be showing a constant and steady increase throughout the state.

FLORIDA FRUIT AND VEGETABLE ASSOCIATION PLANS FOR 1957 CONVENTION

The 1957 Convention of the Florida Fruit and Vegetable Association will be held October 9, 10 and 11, 1957 at the Hotel Fontainebleau, at Miami Beach.



David

According to Joffre C. David, General Manager of FFVA, this will be the 14th Annual Convention of the group and date and place of the meeting was established at a recent meeting of the Board of Directors.

At the 13th Annual Convention held in September, 1956, more than 1500 members and guests attended to hear reports of committees and addresses by outstanding speakers from over the United States.

"The Board of Directors decided to return to the Hotel Fontainebleau and Miami Beach because of the avail-

Chilled Full Strength Orange Juice Becomes Important New Outlet

Chilled orange juice, delivered full strength and, in many instances, left on the doorstep along with the family milk, will account for almost 10,000,000 boxes of oranges from the current Florida crop, Florida Citrus Mutual estimated today.

Approximately 6,000,000 boxes will go directly into chilled juice, Mutual believes, with another 3,900,000 boxes going first into frozen concentrate and then being reconstituted into the chilled single-strength product before being sold to the consumer.

A small amount of the concentrate involved in its figures will be used for beverage base purposes, Mutual said.

If the federal government's estimate of 94,000,000 boxes in the current Florida orange crop is correct, Mutual's figures indicate more than 10 percent of the season's orange production will go into this comparatively new but rapidly growing outlet.

Mutual pointed out that the almost 10,000,000 boxes it is estimated will be used this season represent a substantial increase over the 6,750,000 boxes going into this product last season and 4,850,000 boxes two seasons back.

The cooperative states that "several 'big name' companies are now interested in Florida in the manufacture and distribution of chilled orange

ability of facilities for handling our large group," Davis said.

"At each convention, problems facing the industry are outlined and during the intervening year committees study the problems and present possible solutions to the membership at the Fall meeting. Attendance at our conventions has been increasing annually," said David.

juice, a product which furnishes another outlet for the grower of quality oranges. In other words, it is 'plus business'."

From Sept. 1, 1956, through Feb. 16, 1957, Mutual said figures from the Florida Canners association showed that 1,803,000 boxes of oranges went directly into the making of chilled orange juice, or almost double the volume last season for the same period.

"In addition," Mutual stated, "some of the producers either make the chilled product from reconstituted frozen orange concentrate in entirety, or stabilize the finished product with a certain percentage of concentrate. This season to date another half million boxes of oranges have been used in this way, first having been converted into frozen orange concentrate.

"This means that the equivalent of almost 2,500,000 boxes of oranges have been utilized since September, 1956, for the manufacture of chilled orange juice.

"The rather steady growth of the chilled orange juice operation points to the 'dollar value' of this comparatively new outlet. Its importance to this industry is attested by the millions of dollars being invested by those concerns which are marketing this product now on a nationwide basis."

Mutual estimates 4,200,000 boxes of oranges will go directly into chilled juice during the remainder of the season, with another 3,550,000 boxes going first into concentrate and then being remade into the chilled product.

Fruit, milk and green leafy vegetables are the items many country folks in Florida need more in their diets. These are the foods home-makers should concentrate on.



Federal Agriculture Officials Think Medfly Fight Nearly Won

Ervin Peterson, Assistant Secretary of Agriculture, in a recent visit to Florida for conference with State and Federal officials in charge of the fight against the Mediterranean Fruit Fly and the burrowing nematode, expressed the belief that the Medfly fight was nearly won, but was not so optimistic in regard to the burrowing nematode, the cause of spreading decline of citrus trees.

G. G. Rohwer, Federal man in charge of the USDA's part in the fight against the Medfly, believes that all flies will be eradicated sometime in July, just after the end of the fiscal year.

Ed Ayers, state plant commissioner who conferred with Peterson, was not quite so optimistic. He said new fly finds might continue through the Summer, although he hoped this wouldn't be the case.

Fearful of Nematode

Peterson said he was "quite satisfied" with the progress of the fruit fly eradication program. The state of the fight against the burrowing nematode, cause of spreading decline in citrus trees, was a different

story.

"That little animal looks tougher to me than the Medfly," Peterson said.

Asked after the conference if the USDA plans to retain a \$500,000 appropriation proposal for continuing spreading decline mapping and survey work in its budget requests, Peterson said the question hadn't been decided yet.

Must Reevaluate

"We have to reevaluate the entire program in the light of facts as they now exist," he said.

The Florida Supreme Court has knocked out the old spreading decline containment program by ruling the State Plant Board does not have the right to destroy citrus trees without compensating growers for them.

The USDA has never participated in the bulldozing part of the program but has surveyed and marked areas to be pushed.

Peterson and Ayers studied financial reports which showed the Federal Government had spent \$4,543,711 on the fruit fly program as of March 1

and had some \$228,289 left.

At the same time the state had released funds totaling \$4,328,107 and had some \$771,893 left.

\$23,000 for Contingencies

Based on present estimates, the state figures it will spend \$748,000 by the end of the fiscal year, leaving about \$23,000 "available for unforeseen obligations."

(Continued on page 27)

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Through
Periodic Analysis
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LOWER . . . CITRUS RATES (Continued from page 4)

	G	108	113
	O	97	102
	T	100	105
Muncie	G	108	113
	O	97	102
	T	100	105
Richmond	G	108	113
	O	97	102
	T	100	105
Terre Haute	G	108	113
	O	97	102
	T	100	105
Ohio			
Cincinnati	G	108	113
	O	97	102
	T	100	105
Portsmouth	G	108	113
	O	97	102
	T	100	105
West Virginia			
Charleston	G	108	113
	O	97	102
	T	100	105
Huntington	G	108	113
	O	97	102
	T	100	105
Kentucky			
Louisville	G	108	113
	O	97	102
	T	100	105
Lexington	G	108	113
	O	97	102
	T	100	105
Tennessee			
Memphis	G	108	113
	O	97	102
	T	100	105

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(80/82% MAGNESIUM SULPHATE)

For many years a favorite and dependable source of soluble magnesia for Florida crops. Used extensively in fertilizer mixtures for citrus crops and vegetables. Especially useful and economical for direct application where only magnesia is required.

In Florida, magnesium is now classed as a primary plant food together with nitrogen, phosphorus and potash.

The recommendations of the Florida Citrus Experiment Station at Lake Alfred, stress the need for large application of magnesium for Citrus in soluble form and state that it is usually applied as a Sulphate.

Be sure that your fertilizer manufacturer includes **EMJEO** in your mixtures as a dependable source of soluble magnesium.

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Reports Of Our Field Men . . .

EAST HILLSBOROUGH AND PASCO COUNTIES

E. A. McCartney

We have had rain in this section since the last report and the damage by cold weather with a few exceptions has been to young trees. It looks at this time, March 18th, that a good crop will be set. Sorry to report a few bearing groves were hard hit and are now being pruned back to the live wood.

We are fertilizing young trees; also a few groves in one section where the growers were waiting to see just how bad they were hurt. Most of the early fruit has been moved along with a few valencias, but most have not been sold at this time.

Melons seem to have come through the unfavorable weather in fair shape. Pasture grass is being fertilized and by the time this reaches our readers (if we do not have any more bad weather) most of our concern about this spring will be over. We are checking groves for a post bloom spray. This should start in the next few weeks.

WEST HILLSBOROUGH AND PINELLAS COUNTIES

J. A. Hoffman

Groves are responding nicely to the rains during February. Putting out a heavy flush of new growth and bloom. Although there was from 4 to 5 inches of rain during the latter part of February some groves are starting to show the lack of moisture at this time.

The watermelon fields are looking good in this section. Very

little damage was done during the cold snap during the first of March. The most damage was from high winds, which twisted and burned the tender vines.

SOUTH POLK, HIGHLANDS, HARDEE, DeSOTO AND SARASOTA COUNTIES

C. R. Wingfield

Early March rains brought to an end a desire for another soaking rainy spell with precipitations of 8 to 14 inches. The last spell of this sort was accompanied by winds and ended with some frost that damaged much of the vegetable crops. It was wonderful for citrus which was in blooming condition at the time, but it treated the vegetable grower rather badly.

Due to the weather we are unable to do much effective spraying on watermelons or vegetables which no doubt will lead to insect and possible blight damage. The past few days have shown improvement although there have been rains in spots, but not very heavy ones.

The citrus bloom has been spotted according to varieties. Valencias being very heavy, with Pineapples generally light and early oranges being spotted. Grapefruit appears to be generally light, however, some bloom is still opening. It is rather early to predict a fruit setting. But remember there was a lot of rain in the open bloom and we can look for a heavy drop. Trees are looking good after a good flush of growth that came with the rains. They appear more normal than they have for a long time. Fruit movement is rather slow at this time and the valencia market is low.

NORTH CENTRAL FLORIDA

V. E. Bourland

We have had some rain, but still dry on account of high winds. Young trees still having to be watered and some irrigation plants haven't really ever stopped.

Most citrus trees have from medium to heavy bloom. Groves as a whole have a nice growth.

All early and midseason oranges have been picked and some valencias are being picked for shipping. Still lots of grapefruit to be picked. Most groves have had top dresser applied, still lots of spraying being done.

Melon growers had some bad days with damage from rain, wind and cold weather.

HIGHLANDS AND POLK COUNTIES

J. K. Enzor, Jr., & R. E. Lassiter, Jr.

At the time of this writing most growers have completed their spring top dressing.

Rains which were well above the average in February have been quite a boon to the trees in this area since they suffered from dry weather conditions in the past year or so. On the average, spring growth has been good. We have noticed a lack of bloom in the midseason oranges also in some grapefruit blocks. However there has been an abundance of bloom on valencias.

Many groves are now approaching the stage when the postbloom sprays may be safely applied. Purple mite activity has been declining in the last few weeks although rust mite activity is increasing in some blocks.

Most growers have started their young trees fertilization which should continue every four to six weeks throughout the summer.

Produce MAXIMUM CROPS
of HIGHEST QUALITY
With LYONS FERTILIZER

ADVERTISEMENT — LYONS FERTILIZER COMPANY

**Uncle Bill Says:**

It ain't been too long ago since it was easy to hear folks...even citrus folks...moan and groan 'cause Florida was mighty near to reach a point where they was goin' to grow more citrus fruit than they would be any market for — and that it wouldn't be long until a big hunk of our crop would stay on the trees until it spoiled 'cause we would be raisin' a heap more fruit than we could sell.

Since these days of moanin' and goanin' a good many thousands of young trees has been planted each year and there is still a market for all the good citrus we are able to raise.

In California and Texas the crops has been smaller on account of various reasons and in Spain they was a bad freeze in February this year, so us folks in Florida is mighty lucky in havin' plenty of good fruit to supply both our home markets and the markets abroad. Prices has been purty good the past two seasons, and practically no one at all spends anywhere near the time frettin' and fumin' 'cause annual crops continue to show a good increase.

If we want to worry about something there still seems to be the normal stock of problems which us citrus growers find botherin' us more less all the time to worry about, but overproduction ain't one of our big problems right now.

Citrus diseases continue to keep us growers and the technicians purty busy figurin' how to beat 'em—then they is the business of old trees not producin' as much fruit as they once did, but the constant comin' into bearin' of young trees seems to more than make up fer any losses in volume we may suffer because of disease and old trees.

Fer folks that knows how to grow citrus the future continues to look bright and fer those folks who is buyin' citrus groves fer investments they is plenty of field service men and experts at the experiment station that will be glad to offer counsel — to say nuthin' of a lot of grove caretakers who can do good jobs fer folks who ain't had much experience in growin' citrus.

Don't sell the future of Florida citrus short — it's been doin' all right fer a long time and will continue to do all right.

CITRUS INSECT CONTROL
FOR APRIL 1957

(Continued from page 3)

the mealybugs feed on young fruit. **Purple Mite and Texas Citrus Mite Control:** An oil spray is the most effective miticide for use in the spring. If scale is not a problem, a concentration of 0.7 percent oil is sufficient. Other miticides such as Systox at 1 pint, ovex at 1½ pounds or aramite 45W at 2/3 of a pound per 100 gallons may be used, but they are not as effective during warm weather as they are in the fall and winter months. Neither Systox nor aramite should be mixed with lime-sulfur or other alkaline solutions.

Six-spotted mites can be controlled with the same miticides used for purple mite control.

Rust Mite Control: A combination of 1 gallon of lime-sulfur plus 5 pounds of wettable sulfur per 100 gallons is effective for rust mite control and can be used on all varieties at

Classified Ads

COME AND GET 'EM
Any Part

25,000 8" Red Mesh Orange Bags in lots of 1,000, 4 cents each

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Advisory Group Seeks
Research On Citrus

A research program strong on basic studies and with increased emphasis on finding new and improved uses of citrus and subtropical fruits was called for by an advisory group to the U. S. Department of Agriculture at a meeting in Washington, D. C. March 4-7.

this time of year. Wettable sulfur at 10 pounds per 100 gallons is also effective and can be mixed with all citrus sprays except oil emulsion. Lime-sulfur should not be mixed with copper sprays. If showers are not too frequent, a thorough application of sulfur dust may be used, but a dust is not so effective as a spray.

A thorough coverage of foliage with all sprays will result in the longest period of control.

Details of spray schedules and the various materials used will be found in the "Better Fruit Program" and this should be consulted to determine which materials may or may not be combined. For further information, consult the Citrus Experiment Station at Lake Alfred or Fort Pierce.

The recommendations were among the high-priority research needs cited by the Citrus and Subtropical Fruits Research and Marketing Advisory Committee at its annual meeting in Washington. The group is composed of persons outside USDA chosen to review the Department's research in this field and to advise the Secretary of Agriculture on problems that should receive special attention.

Under domestic marketing services of USDA, the committee called for expanded work on development and revision of U. S. grade standards for citrus fruits and products; obtain market news reports from more cities on truck receipts; expand work on planning wholesale food marketing facilities in specific localities. The group also urged a continuation of USDA's foreign market development program for citrus fruits and products.

The committee called for an expansion of cooperative service work by State departments of agriculture to improve or maintain quality control and to widen outlets for citrus fruits and products. It endorsed an expanded program by the Cooperative Extension Service of educational work with citrus producers, wholesalers, retailers, and consumers.

CITRUS ESTIMATE — MARCH 1, 1957
(Released by U. S. Department of Agriculture March 11, 1957)

	ESTIMATE FOR 1956-57			
	(At Oct. 1)	(At Jan. 1)	(At Feb. 1)	(At Mar. 1)
ORANGES				
U. S., All	/1	133,915	133,615	133,615
Florida, All	95,000	94,000	94,000	94,000
Early & Midseason	51,000	51,000	51,000	51,400
Valencias	41,000	40,000	40,000	40,000
Templets	3,000	3,000	3,000	2,600
California, All	/1	36,500	36,500	36,500
Early & Midseason	14,500	14,500	14,500	14,500
Valencias	/1	22,000	22,000	22,000
Texas, All	2,300	2,000	1,700	1,700
Arizona, All	1,320	1,300	1,300	1,300
Louisiana, All	115	115	115	115
GRAPEFRUIT				
U. S., All	/1	43,200	43,000	42,800
Florida, All	35,000	35,000	35,000	35,000
Seedless	21,000	20,000	20,000	20,000
Other	14,000	15,000	15,000	15,000
California, All	800 /2	2,200	2,200	2,300
Texas, All	3,500	3,000	2,800	2,800
Arizona, All	3,000	3,000	3,000	2,700
TANGERINES				
Florida	5,200	5,000	5,000	4,800
Total U. S. Citrus	/4	182,115	181,615	181,215
Total Florida Citrus	/4	135,200	134,000	133,800

* Thousand boxes

/1 Estimates not available until Dec. 10. /2 Desert Valley only. /3 Total on Dec. 16.

/4 Excluding Lemons & Limes.



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**FEDERAL AGRICULTURE
OFFICIALS THINK MEDFLY
FIGHT NEARLY WON**
(Continued from page 23)

Peterson commented that "on the basis of the best information we now have, the funds we have—both state and federal—will be enough to last us through June 30."

The plant commissioner stressed the importance of having an emergency fund for unforeseen developments and Peterson agreed.

Needs Balance

Ayers explained the state had spent less so far because the state needed to keep a balance to maintain a trapping and inspection staff.

Because the state can hire or fire employees more easily than the Federal Government, the state has been hiring most of the men for the program and the Federal Government has been buying most of the spray.

Officials said both echelons would have spent about the same amount by the end of the fiscal year.

Peterson said it appeared to him that the major job now was to concentrate attention on developing a trapping program which will continue after the eradication job is over.

Would Expand Hunt

Rohwer suggested the trapping program include not only the Mediterranean fruit fly but also other possible invaders such as the melon fly and the oriental fruit fly as well.

"You're right as rain as I see it," Peterson replied. "We should catch them in the incipient stages to avoid another program like this."

Rohwer agreed with Peterson that on the basis of present release schedules the spraying should end in May, but he pointed out that future fly finds are still expected.

"We're going to have to expect some freaks because of an extended life cycle," Rohwer said. Cold weather increased the life cycle of the fly more than experts had thought possible and some spraying was stopped prematurely.

Thonotosassa Worst

Thonotosassa in Hillsborough County was described as the "hottest" infestation in the state now.

Peterson looked over charts which showed acreage under spraying schedules is now down to 19,000 compared with 780,000 acres sprayed at one time or other during the program.

"It seems that everything has been well handled," Peterson said. "We're delighted at the way this thing has worked out."



Art Karst, Indian River Grove Management Specialist, Vero Beach, checks development of citrus crop coming along beautifully with help of d/p Dolomite

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